[0068] Processing means **1130** could also include software algorithms to distinguish the static background field in image **1200** and the moving parts of the hand in image **1200**. This would, for instance, be possible by identifying the vertical motion of the selected fingertip toward input sensor **1110** over a series of image frames before or immediately after the time of activation of input sensor **1110**.

[0069] Once processing means has identified the selected function, system **1100** could further include an output means **1140** that is capable of executing the selected function as is discussed infra in relation to two different applications with respect to FIGS. **13-14**. The user could also obtain feedback over his/her selected function by including a feedback means **1150** in system **1100**. Feedback means **1150** could be any type of feedback architecture such as audio through sounds or voices, visual through any kind of display, or tactile through vibration or any tactile stimuli. Feedback means **1150** could also be provided through the execution of the selected action or function (in this case there won't be a need for an additional feedback means **1150** since it could simply be built-in with the system).

[0070] The present invention could be used in a wide variety of applications such as, but not limited to, applications where the user is prevented to look at the input sensor or at the selected fingertip while the user selects and activates the input sensor. This would, for instance, be possible in situation where a user needs to select a function or express his/her intention, but it would simply be unsafe or impossible to look at the input sensor or at the selected fingertip while the user selects and activates the input sensor. These situations could arise when a user controls a car, a plane, or some other machinery, and therefore (s)he has to look in a specific direction, which may prevent the user from looking at the input sensors or controls. A similar need arises when the user's field of view is limited, for example while looking through a viewfinder, or when the input sensor or control is not visible at all, e.g. in the dark. In all these situations there is a need to select one out several functions with user's hands based on tactile information only, without looking at the controls. In order to enhance tactile feedback from touching the input sensor, input sensors of the present invention could include tactile stimuli, such as, for instance, but not limited to, a fuzzy, scratchy, rough or abrasive button. It could also include bumps, lines or shapes in a particular overall shape or orientation, some of this which is common in braille, i.e. a system of writing or printing for the blind in which combinations of tangible dots or points are used to represent letters, characters etc, which are "read" by touch. Needless to say, another possibility where the present invention would be advantageous is for the blind. A blind person would only need to know which fingertip corresponds to which function and thereby the task of selecting a function or expressing intent would be made easier and user-friendly.

[0071] Most of the applications where the present invention would be useful deal with instrument or control panels, such as (1) an audiovisual display of a radio, video-player, DVD-player or the like, (2) a instrument panel in a vehicle, an airplane or a helicopter, (3) a remote control device, (4) a wireless communication device such as a cell phone or the like, (5) a computer device such as a notebook, personal digital assistant, pocket PC or the like, (6) bank machines such as ATM machines, (7) industrial controls, (8) vending machine, or (9) videogame console. The present invention would be advantageous in application where there is a need to minimize the size of the system or device while maintaining or increasing the number of possible options or functions. Examples are, for instance, a cell phone, personal digital assistant or pocket PC where the manufacturer would like to increase the functionality while at the same time miniaturize the system or device.

[0072] FIGS. **13-14** show respectively two different examples of potential applications related to a CD-player **1300** and a cell phone **1400**. CD-player **1300** includes a slot **1310** to insert a CD, one input sensor **1320** in the form of a button, and an imaging means **1330** positioned relative to input sensor **1320** in such a way that imaging means **1330** could acquire image of a part of the user's hand large enough to identify from the image the selected fingertip. One of the possibilities for input sensor **1320** is to define four different functions related to some basic operations of CD-player **1300**. For instance, one could define four different functions corresponding and dependent on the fingertips of the right hand, i.e. fingertip of the index fingertip is correlated to the function "play", fingertip of the middle fingertip is correlated to the function "next track", fingertip of the ring fingertip is correlated to the function "previous track", and fingertip of the little fingertip is correlated to the function "eject". As a person of average skill in the art to which this invention pertains would readily appreciate, additional functions could be defined, as well as additional input sensors each with their own defined functions could be added to improve the functionality and user-friendliness of CD-player **1300**.

[0073] Cell phone **1400** pretty much looks similar to currently available cell phone such as a section for keypads **1410** and a feedback means **1420** in the form of a display unit. The difference, however, is that cell phone **1400** further includes keypads in which it is no longer necessary to press multiple times to select or activate a function. As discussed in the background section supra for current cell phones, the activation of, for instance, "D" is based on one touch on the key, "E" is based on two touches on the key, "F" is based on three touches on the key and "3" is based on four touches on the key. On the contrary, cell phone **1400** of the present invention would only require keypads that can sense a single touch or activation. Cell phone **1400** of the present invention would now include an imaging means **1430** and a processing means (not shown) as discussed supra. Cell phone **1400** is not limited to a keypad since it could include any type of input sensor, such as a touchscreen, in order to communicate user's intent or selection of function, including motion detection sensors as discussed supra. For instance, the individual keypads of cell phone **1400** could be used as small trackpads to select functions or action on, for instance the display area of cell phone **1400**.

[0074] Imaging means **1430** is positioned relative to input sensors **1410** in such a way that imaging means **1430** could acquire an image that contains a part of the user's hand large enough to identify from the image the selected fingertip. One of the possibilities for input sensor related to keypad "3DEF" is to define four different functions related to some basic operations of this keypad. For instance, one could correlate four different fingertips of the right hand to the selection of function "3", "D", "E", and "F". For instance, one could define fingertip of the index fingertip is correlated